# No Evidence of a
# New Weak Calf Syndrome

## National Animal Health Monitoring System

A condition termed "weak calf syndrome" in beef calves was first described in the 1960's. Since then, causes have been suggested, including viral and bacterial agents, nutritional deficiencies, toxicities, and environmental conditions leading to stress. In retrospect, it appears that a deficiency in the dam's protein and energy intake set the stage for the syndrome.

In April 1993, cattle producers and agricultural diagnosticians began to speculate on another occurrence of increased death losses in beef calves due to a weak calf syndrome. The syndrome was defined as increased numbers of:

- calves stillborn, or;

  calves born normally, but unable to stand and nurse resulting in death within minutes to hours of birth despite good mothering by the dam, or;

- calves born normally, vigorous and nursing, but exhibiting signs of neonatal diarrhea, respiratory disease, or navel ill resulting in death in the first 3 days of life.

Diagnosticians have since associated a number of infectious agents with these calves, but a common thread with regard to infectious agents is lacking. Many continue to suggest a link with nutrition and weather. The scope of the problem has been difficult to define.

Anecdotal evidence would indicate that the distribution of the problem is spotty with some states affected more severely than others. The overall effect on the total calf crop has been unknown.

As part of the National Animal Health Monitoring System's (NAHMS) Beef Cow/Calf Health and Productivity Audit (CHAPA), producers were asked about deaths among calves born in the first 6 months of 1993 and their perceptions of weak calf syndrome occurrence on their operations. The NAHMS study was

Figure 1



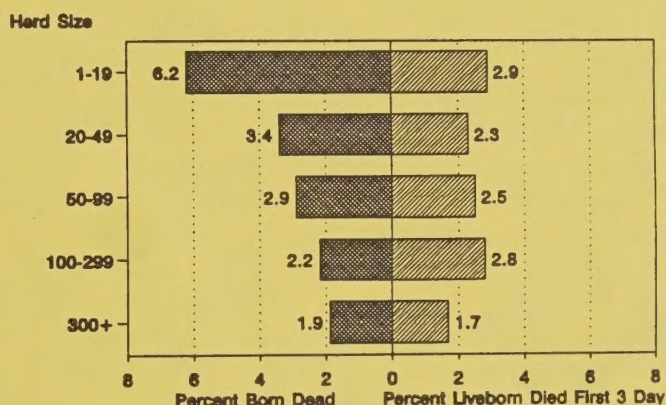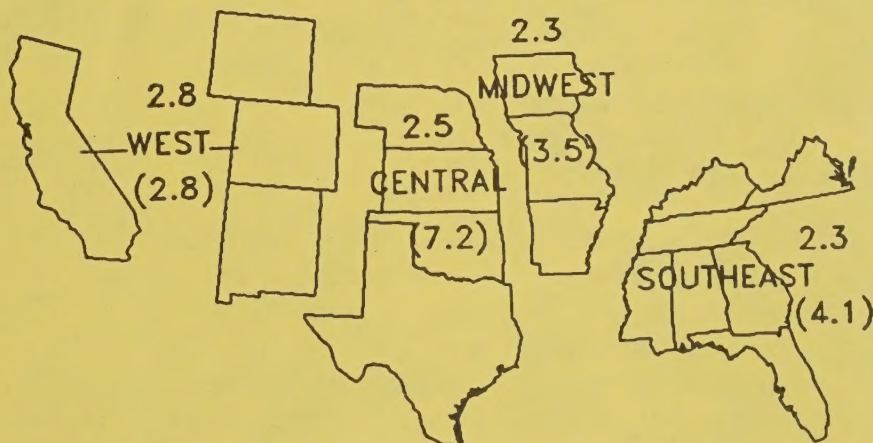Calves Born Dead or Died in First 3 Days of Life by Beef Cow Herd Size

Figure 2



Calves Born Dead and Live-Born Calves Dying in the First 3 Days of Life by Region

\# = Percent live born died in first 3 days of life.
(#) = Percent born dead.

conducted on 799 beef cow/calf operations in 18 of the top beef states.[1] Seventy percent of U.S. beef cow/calf operations are in these 18 states.

There appears to have been regional and herd size differences in the proportion of calves stillborn (Figures 1 and 2). A higher proportion of calves were stillborn on

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1 Alabama, Arkansas, California, Colorado, Florida, Georgia, Iowa, Kansas, Kentucky, Mississippi, Missouri, Nebraska, New Mexico, Oklahoma, Tennessee, Texas, Virginia, and Wyoming.

Target population: beef cow/calf producers with 5 or more beef cows and with 50 percent or more of 1992 calves born from January through June.

smaller operations, while the lowest was reported by producers with 300 or more cows. Over 7 percent of calves born in the central region were stillborn, and the lowest rate occurred in the western region.

Overall, cow/calf producers reported losing 2.5 percent of the calves born alive in the first 3 days of life. These calf death losses did not appear to be related to herd size, except that herds with 300 or more cows seemed to have lost smaller proportions of calves (Figure 1.) Nor were death losses restricted to a single region of the country (Figure 2).

Among producers who qualified to be in the study, 25.5 percent of operations reported that calf death losses in the first 3 days of life were above a level expected in a normal year, while 61.4 percent reported expected levels (Figure 3). When provided with the definitions described earlier and asked if their operation had experienced cases they would attribute to weak calf syndrome, 6.4 percent of producers indicated that they had.

There was a strong relationship between producers' reports of weak calf syndrome and geographic region. The largest proportion of producers who reported the condition in their calves were from the west (20.8 percent, Figure 4.) The southeast region was apparently spared with only 1.3 percent of producers reporting cases. Operations with 50 or more cows were more likely to report weak calf syndrome than smaller operations (Figure 5). A possible influence may have been that smaller operators were more aware of what was going on in their herds and were less likely to attribute health events to this generic condition.

In conclusion, it appears that the spring 1993 outbreak of weak calf syndrome is consistent with the situation described in the 1960's. Poor forage production in 1992 led to limited feed supplies on beef operations. Bad weather induced early onset of the feeding period. Faced with small forage stores and a prolonged feeding period, producers reduced the amounts of feed to cows. The result was cows in poor body condition as they entered the calving season. Calves from these cows were likely stressed due to weather conditions and suffered some degree of failure of passive transfer of antibodies from the dam. Failure of antibody transfer created the opportunity for infection with common disease organisms. These infections were responsible for diarrhea or signs of respiratory disease in calves. More attention to colostral management would probably have had little effect in the outcome in such cases.

Other NAHMS collaborators included the National Agricultural Statistics Service (USDA) and State and Federal Veterinary Medical Officers.

Figure 3

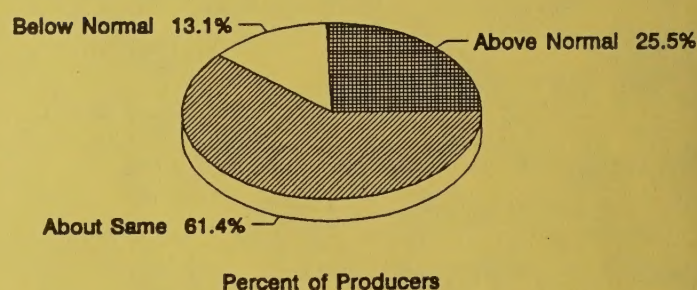## Producers' Opinions of Spring 1993 Death Losses Compared With Normal Year

Below Normal 13.1%

Above Normal 25.5%

About Same 61.4%

Percent of Producers

Figure 4

## Percent of Operations Reporting Occurrence of Weak Calf Syndrome by Region

% Reporting Weak Calves

20.8

8.2

7.5

1.3

West        Central        Midwest        Southeast

Region
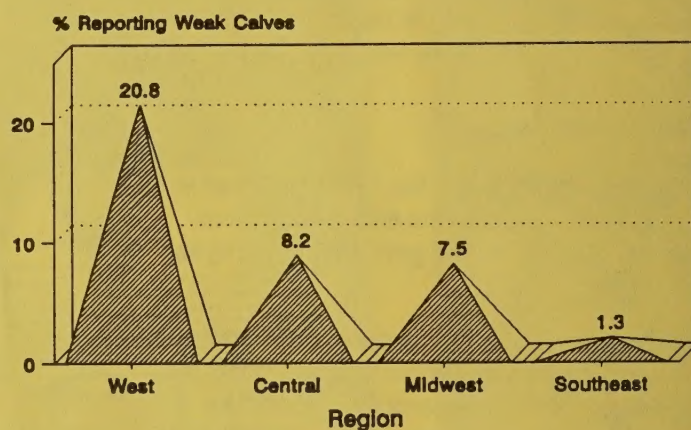
Figure 5

## Percent of Operations Reporting Occurrence of of Weak Calf Syndrome by Beef Cow Herd Size

% Reporting Weak Calves

13.6

11.3

9.9

5.9

3.8

1-19        20-49        50-99        100-299        300+

Beef Cow Herd Size